Labor Market Recoveries Across the Wealth Distribution

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Abstract

This paper studies why, in the aftermath of recessions, low-wealth workers experience larger falls and slower recoveries in earnings than high-wealth workers. I show that differences in job-switching and job-losing rates play an important role in explaining these earnings dynamics. I build a macro model of the labor market that includes a novel ingredient, which I document and quantify empirically: when workers switch to new jobs they suffer a 9 percentage point increase in their job-loss probability over the first fifteen months at the new job. Through this model I conclude that differences in job-switching and job-losing by wealth, which the model can endogenously reproduce, explain 20 percent of the gap in earnings between low- and high-wealth workers following the Great Recession. Furthermore, the model is consistent with the sudden increase in job-switching that the US labor market experienced following the Pandemic recession, suggesting that generous government stimulus played a sizable role in the recovery.

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1 Introduction

Low-wealth workers tend to experience worse and longer lasting labor market downturns than high-wealth workers. After the Great Recession, for instance, workers with below median wealth experienced roughly an 8% decline in earnings, a fall that took almost four years to recover. In contrast, workers with above median wealth experienced almost no drop in earnings. In other words, the workers who suffer the worst consequences of recessions are also those worst prepared to confront them.

A recent literature speaks to this heterogeneity in labor market outcomes by documenting large differences in the rates at which workers flow from unemployment into employment. Despite there being a well documented link between worker flows and labor market outcomes, the mechanisms driving the heterogeneity in worker flows are still not well understood. This is especially true when it comes to the job-switching and job-losing rates, whose roles are often overlooked in favor of the job-finding rate.

This paper identifies differences in the job-switching and job-losing rates as major contributors to the deeper and more prolonged fall in earnings experienced by low-wealth workers relative to high-wealth workers following recessions. I document that workers who switch to new jobs experience a persistent increase in risk of job-loss and I build a model with this ingredient at its core. This assumption gives rise to two novel mechanisms which, together, can explain the cyclical differences in the job-switching and job-losing rates across the wealth distribution. These mechanisms are the *precautionary job-keeping motive*, which deters low-wealth workers from switching jobs to avoid the risk of job-loss that switching entails, and the *low-tenure trap*, which makes low-wealth workers more exposed to job-loss because of the lower job-tenure these workers tend to have. Through these mechanisms, the model can explain 20 percent of the earnings gap experienced by workers in the top and bottom halves of the wealth distribution in the aftermath of the Great Recession. In addition, the model is consistent with the Great Resignation, the sudden increase in job switches that the US labor market has experienced following the Pandemic Recession, implying that the generous government stimulus played a sizable role in the rebound of the job-switching rate.

Two novel empirical facts motivate the development of this theory. The first is that the standard deviations of the cyclical components of the job-switching and job-losing rates at the bottom of the wealth distribution are twice as large as those at the top of the wealth distribution. The second is that these rates are also more persistent at the bottom of the wealth distribution. In other words, after a recession hits, the rate at which low-wealth workers switch jobs falls by more and takes longer to recover relative to the rate for high-wealth workers; the rate at which low-wealth workers lose their jobs increases by more

and remains higher longer than the rate for workers with high wealth. To establish these facts, I use the Survey of Income and Programs Participation, a representative survey of US individuals that contains rich information on respondents' labor market histories and their financial wealth.

I next develop a model that, unlike standard models of the labor market, can speak to these empirical facts. I do so by integrating an incomplete markets, heterogeneous agent framework into a search and matching model à la Diamond (1982) and Mortensen and Pissarides (1994) (hereafter DMP). At the heart of this model is the key assumption, validated in the data, that I previously highlighted: when workers switch jobs they face a persistent increase in probability of job loss.

While it is well documented (e.g. Martellini, Menzio and Visschers (2021)) that workers starting a job out of unemployment at first face a high probability of losing their job that falls as the worker gains tenure at the job, I show that a similar pattern holds for workers switching from one job to another. In other words, workers who switch jobs face a higher probability of losing their jobs than they would have had they not switched in the first place.

But just how big is the risk faced by workers starting a new job? To determine the additional risk of job-loss that job-movers face I run an event study similar to that of Davis and Von Wachter (2012). I find that the increase in job-loss probability due to job-switching ranges from 6 to 12 percentage points in the first fifteen months at a new job. That is, workers who move from an old job to a new one are between 6 and 12 percentage points more likely to suffer an unemployment spell in the fifteen months following the switch than they would have been had they not switched jobs in the first place. Even at the low end, this estimate is economically significant given that the typical US worker has, over a fifteen month period, a 14 percent chance of being laid-off.

In addition to an increased job-loss probability after job switches, two more ingredients are crucial for the model to deliver the cyclical moments of the job-to-job transition and job-losing rates across the wealth distribution: workers accumulate assets, and they are risk averse. While these two assumptions are completely standard in macroeconomics, they are seldom made by the search and matching literature for technical convenience. Furthermore, the few papers that have considered these (Krusell, Mukoyama and Şahin (2010) is an early example), do not incorporate job-switches. The model I develop is the first in the search and matching literature to incorporate curved utility, asset accumulation, and job-to-job transitions.

Precautionary job-keeping. With these three key ingredients the model gives rise to the two mechanisms that allow it to match the empirical distributional variation in the cyclical component of the job-to-job transition and job-losing rates. The first mechanism, which I denote the *precautionary job-keeping motive*, delivers moments for the job-to-job transition rate in line with the data. Simply put, low-wealth workers behave more conservatively in their labor market decisions because they are less willing to bear the risk that comes from switching jobs. While high-wealth workers can rely on their assets to get by in periods of unemployment, this is not an option for workers with low wealth. This implies that, even if offered a higher-paying job, a low-wealth worker will be less willing to accept it because they may not be able to face the higher probability of falling into unemployment.

To establish the empirical relevance of precautionary job-keeping I once again rely on the SIPP. Cross-sectional evidence from these data allows me to verify that workers with higher wealth-to-income ratios are indeed more likely, conditional on observables, to experience job-to-job transitions. Furthermore, the data show that an increase in wealth has larger effects on the propensity to switch jobs at the bottom than at the top of the wealth distribution. This is in line with the model which, because of curved utility, implies that an extra dollar has little effect on the job-switching behavior of high-wealth workers but has a positive and sizable effect for low-wealth workers. These reduced form results are consistent with a recent experiment that establishes a relationship between wealth and job-switching. The Stockton Universal Basic Income Experiment, in which some individuals randomly receive monthly payments for $500, suggests that workers who received the transfer were more likely to quit and switch to a new job than workers who did not receive the transfer [ADD CITE TO REPORT.].

While this evidence shows that the precautionary job-keeping motive holds generally, it is strongest after a recession hits the economy. This is because recessions, which tend to lead to loss of wealth, deplete workers' savings making them more sensitive to precautionary job-keeping. Consistent with the empirical evidence discussed above, this is particularly true for those workers who have little wealth to begin with. If a high-wealth worker loses their job, they can get through the periods of unemployment comfortably using their savings, but this is not an option for a low-wealth worker. Because of this, in recessions, low-wealth workers who suffer a loss in wealth will become even more hesitant to switch to a new job which would expose them to higher unemployment risk. This asymmetric sensitivity to the precautionary job-keeping motive across the wealth distribution explains why the cyclical component of job-to-job transitions is more volatile for low-wealth workers. Additionally, because wealth is slow to recover, precautionary

job-keeping also explains why the job-switching rate recovers more slowly at the bottom of the wealth distribution.

Low-tenure trap. The second mechanism, which I denote the *low-tenure trap*, reconciles the empirical moments on the cyclicality of the job-separation rate across the wealth distribution. Unlike the precautionary job-keeping motive, which underscores a causal relationship between wealth and workers' labor market decisions, the low-tenure trap is the result of the model's equilibrium forces. Simply put, the low-tenure trap is the tendency of low-wealth workers to cycle between unemployment and low-tenure (high job-loss probability) jobs following a recession. As the economy recovers from a recession, the unemployed, most of whom are low-wealth, re-enter the labor market taking up new, low-tenure positions. This leads low-wealth workers to occupy a disproportionate share of low-tenure jobs that are more likely to lead to job loss. In turn, this implies that the average separation probability for low-wealth workers is higher, meaning a greater share of these workers will fall back into unemployment. As these workers once again find employment, they will once more be in low-tenure jobs that are at high risk of job-loss. This cycle continues until, finally, these workers are lucky enough to gain tenure and stability at their jobs.

The low-tenure trap is also present in steady state. Low-wealth workers make up a disproportionate share of low-tenure workers. In light of the precautionary job-keeping motive, this fact may seem counter-intuitive – after all, it is low-wealth workers who, because of the risk that comes with switching jobs, value tenure relatively more. While this is true, low-wealth workers tend to have low wealth precisely because they have had an unfortunate labor market history. In other words, low-wealth workers are such because they experienced more frequent unemployment spells. When employed, they mechanically tend to be in a lower tenure jobs because they are more likely to have recently escaped unemployment. The reason why this mechanism is exacerbated after a recession is due to the size and composition of the unemployment pool. During a recession, the unemployment pool is larger and so there is a reallocation of workers to lower tenure jobs. However, the unemployment pool in recessions is also more skewed towards low-wealth individuals than in normal times. This is not only due to the fact that low-wealth workers are generally more likely to fall in unemployment, but also to the increased duration of unemployment during recessions. Higher duration of unemployment means that unemployed agents further run down their savings while waiting to gain employment.

Main results. The first measure of the model's success is in its ability to match the different cyclical behavior the job-to-job transitions and job-losing rates display across the wealth distribution. Unlike standard models of the labor market, this model delivers the higher volatility and persistence these rates exhibit at the bottom of the wealth distribution. In addition to the distributional moments, this model is also able to deliver a time-varying aggregate job-separation rate without the need of endogenizing separations. Even with an exogenous job-separation rate, the aggregate job-separation rate increases following recessions because of compositional forces that re-distribute workers to lower tenure jobs. After a recession, the mass of workers moves towards lower tenures which are characterized by higher probabilities of separation. This, in turn, increases the aggregate job-separation rate.

The second success of the model is that it provides two new and quantitatively important channels to understand why earnings fall more and recover more slowly for low-wealth workers than high-wealth ones following recessions. Because of the precautionary job-keeping motive, low-wealth workers become more hesitant to switch to new jobs after recessions. While this spares these workers additional risk of job-loss, it also prevents them for accepting better, higher-paying jobs, slowing their earnings recovery. Because of the low-tenure trap, workers with low wealth are more exposed to unemployment risk after recessions. This makes low-wealth workers cycle between low-tenure jobs and unemployment, limiting their participation in the labor market and also preventing them from reaching higher-paying jobs. The model implies that these two phenomena can explain 20 percent of the gap in the earnings recovery experienced by low-wealth workers relative to high-wealth ones following the Great Recession.

The third success of the model is in its ability to explain the phenomenon that has come to be known as the "Great Resignation," the large spike in quits and job-switches that the US has experienced since the end of the Pandemic Recession. While the Great Resignation has taken policymakers and analysts by surprise, my model shows that it can be explained by the large rounds of fiscal stimulus that accompanied the recession. According to the model, an injection of wealth in the economy alleviates the precautionary job-keeping motive, pushing more workers, especially low-wealth ones, to switch jobs. This is exactly what the data show: a large infusion of cash on worker's balance sheets followed by a jump in job-to-job transitions. Using the quantitative model, I determine that, if the government had not delivered the fiscal stimulus, the Great Resignation would not have occurred: the job-to-job transition rate would have dropped by an extra 20 basis points at its trough, and even by the end of 2021, it would not have fully recovered.

Placement in the literature. This paper makes significant contributions to three strands of the macroeconomic literature. First, it contributes to the work studying labor markets over the business cycle. For decades now, researchers have sought to build models that can explain the cyclical properties of labor market indicators. As Shimer (2005) famously points out, this can be challenging for the DMP model, the workhorse macroeconomic model of the labor market. Many of the models that have made advances in matching cyclical labor market moments have introduced various degrees of heterogeneity. My paper pushes this further by including rich heterogeneity in a setting with on-the-job search. Importantly, my paper moves away from the complete markets setup popularized by Merz (1995) and Andolfatto (1996) and instead develops a business cycle model of the labor market with job-switching and uninsurable idiosyncratic risk.

While some papers can claim success in matching the cyclical properties of labor market rates, no model has seriously been able or even attempted to match the cyclical properties of these rates across the wealth distribution. This paper does exactly that: it matches not only the mean but also the variance and persistence of the job-switching and job-losing rates across the wealth distribution. Doing so is crucial to understand the differential labor market outcomes of workers following recessions.

Krusell et al. (2017) successfully match the aggregate means and variances of labor flows across employment, unemployment, and non-participation. In fact, their model can capture the means of these rates across the wealth distribution. I go beyond their work in two respects. The first is by matching not only the means but also higher moments of the job-switching and job-separation rates across the wealth distribution. The second is by doing this in a full general equilibrium DMP model. Krusell et al. (2017) use a search model with an exogenous job-finding rate in which all the action is on the labor supply side. While this is a useful simplification, it does abstract from the hiring decisions made by firms, an important factor in business cycle dynamics.

My second contribution is to the large body of work studying economic recoveries. This paper advances our understanding of the heterogeneous recoveries different workers undergo and specifically how job-to-job switches and job-separations contribute to this heterogeneity. The importance of the job-to-job transition and job-separation rates in the aggregate is well known. Moscarini and Postel-Vinay (2017) directly tie stronger economic recoveries to higher job-switching rates by noticing that, in the aggregate, the job-to-job transition rate is an important determinant of wage growth. Relatedly, Gertler, Huckfeldt and Trigari (2020) and Fukui (2020) stress the importance of job-switching to understand nominal wage rigidity, a key factor in New-Keynesian models. In addition, researchers have also stressed the importance of movements in the job-losing rate. Elsby,

Michaels and Solon (2009) show that, in addition to a falling job-finding rate, increases in the job-losing rate are important to explain the cyclical fluctuations of unemployment. That is, while it is true that following recessions it is harder to find a job, it is also true that it is easier to be laid off. Both these rates contribute to an increasing unemployment pool during recessions. I complement this work by showing that the job-switching and job-losing rates are not only important for understanding aggregate dynamics in the labor market, but also to understand the differences in labor market outcomes across the wealth distribution.

In doing so, this paper complements the recent literature that studies the heterogeneous effects of recessions. Guvenen et al. (2017) document how workers are differently exposed to aggregate shocks. In line with this, Heathcote, Perri and Violante (2020) use a model to show that recessions exacerbate income inequality by causing a fall in hours worked and an increase in non-participation for low-income workers. Similarly, Kramer (2022) shows that poor workers' earnings prospects are worse during recessions in part because these workers have a harder time finding employment. My paper adds to this literature by studying wealth as the source of heterogeneity and by quantifying the effect and analyzing the mechanisms through which the job-switching and job-losing rates contribute to heterogeneous recoveries. [ADD REFERENCE TO SCARRING AND KAHN?]

The third strand of literature my work contributes to is wage determination in search and matching models. I develop the first bargaining protocol that can accommodate risk-averse agents, asset accumulation, and job-to-job transitions. This protocol is flexible and can fit within a large set of models.

Search and matching models tend to assume linear utility and hand-to-mouth workers. While convenient, these assumptions are unrealistic and restrictive when tackling many questions in macroeconomics. Krusell, Mukoyama and Şahin (2010) construct one of the first DMP models with risk-averse consumers who accumulate assets but do not allow workers to switch jobs. Their work uses Nash bargaining to derive a mapping between assets and wages although, as the authors point out, it is computationally expensive. Including transitions from one job to another gives rise to two ulterior challenges: the presence of three parties in the bargaining, and the potential for re-negotiations. When it comes to job-to-job transitions and wage determination, the work by Cahuc, Postel-Vinay and Robin (2006) has become the gold standard in the literature. Their elegant solution to this problem is achieved using an infinitely-lived bargaining game à la Rubinstein (1982). However, their formulation of the problem relies crucially on linear utility and hand-to-mouth agents. My wage solution relaxes these assumptions and is able to

nest the result in the work by Cahuc, Postel-Vinay and Robin (2006). One further advancement in this literature has been made recently by Fukui (2020). However, this work does not allow for wealth accumulation and is resolved by wage posting à la Burdett and Mortensen (1998), meaning that firms are not allowed to re-negotiate wages when their workers have an outside option.[1]

The bargaining protocol I develop is a finite-horizon variant of the alternating offer bargaining developed by Hall and Milgrom (2008). Similarly to Christiano, Eichenbaum and Trabandt (2016), I assume workers and firms make each other sequential offers over finitely many sub-periods. My assumption that state variables do not evolve within bargaining sub-periods makes the solution to this problem computationally efficient and amenable to accommodate job-switches.

[1]The fact that workers who have outside offers cannot re-negotiate their wages with the firm they are employed at is not supported by the data. In the NY Fed Survey of Consumer Expectations, I find that roughly half of all workers who receive outside offers try to re-negotiated their wages.